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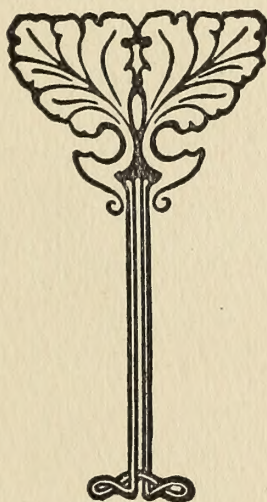
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U. S. Department of Agriculture.

COMMERCIAL
VARIETIES OF
MANGO AND AVOCADO
TREES



GEORGE B. CELLON
TROPICAL GROVE

NURSERY DEPARTMENT, MIAMI, FLORIDA, U. S. A.

Copyright, 1912, by George B. Cellon, Miami, Florida

RETURN TO POMOLOGY
SECTION OF NOMENCLATURE.

JAN 8-1916



GEO. B. CELLON, MIAMI, FLORIDA.

W. E. MARCH.

GEO. B. CELLON.

THE HINDOOS.

MULGOBA MANGO.

PIONEERS.

INTRODUCTION

With this issue we desire to express our greeting of pleasure for our success in establishing, in market and commercial cultivation, aristocratic varieties by asexual propagation, true to name, the delicious and nourishing Mango and Avocado.

While they may never be in as abundant supply, on account of the difficulty in their propagation and the limits of area that they can be grown for American markets, they are equally as important as any fruit now under cultivation.

And we desire to say, in the language expressed by the late Mr. W. E. March, of Miami, Florida, after we had marketed our first commercial crop of Mangoes in America: "To present to our fellow man the Mulgoba Mango, and see the expression of satisfaction on his countenance as he eats the fruit, is ample remuneration for all that we have ever done in the introduction of these fruits."

We again desire to express our appreciation of co-operation and patronage, pledging our efforts in the future.

Very truly yours,

GEORGE B. CELLON.

Miami, Florida, Oct. 1, 1912.

Established in 1901.

Commercial Fruit Culture

We have, in the past twelve years, developed and established a new branch in commercial fruit culture by the selection of varieties and the application of progressive methods of budding the Mango, Avocado, and other tropical fruits, which gives as great opportunities for profits as has ever existed in the commercial production of fruit.

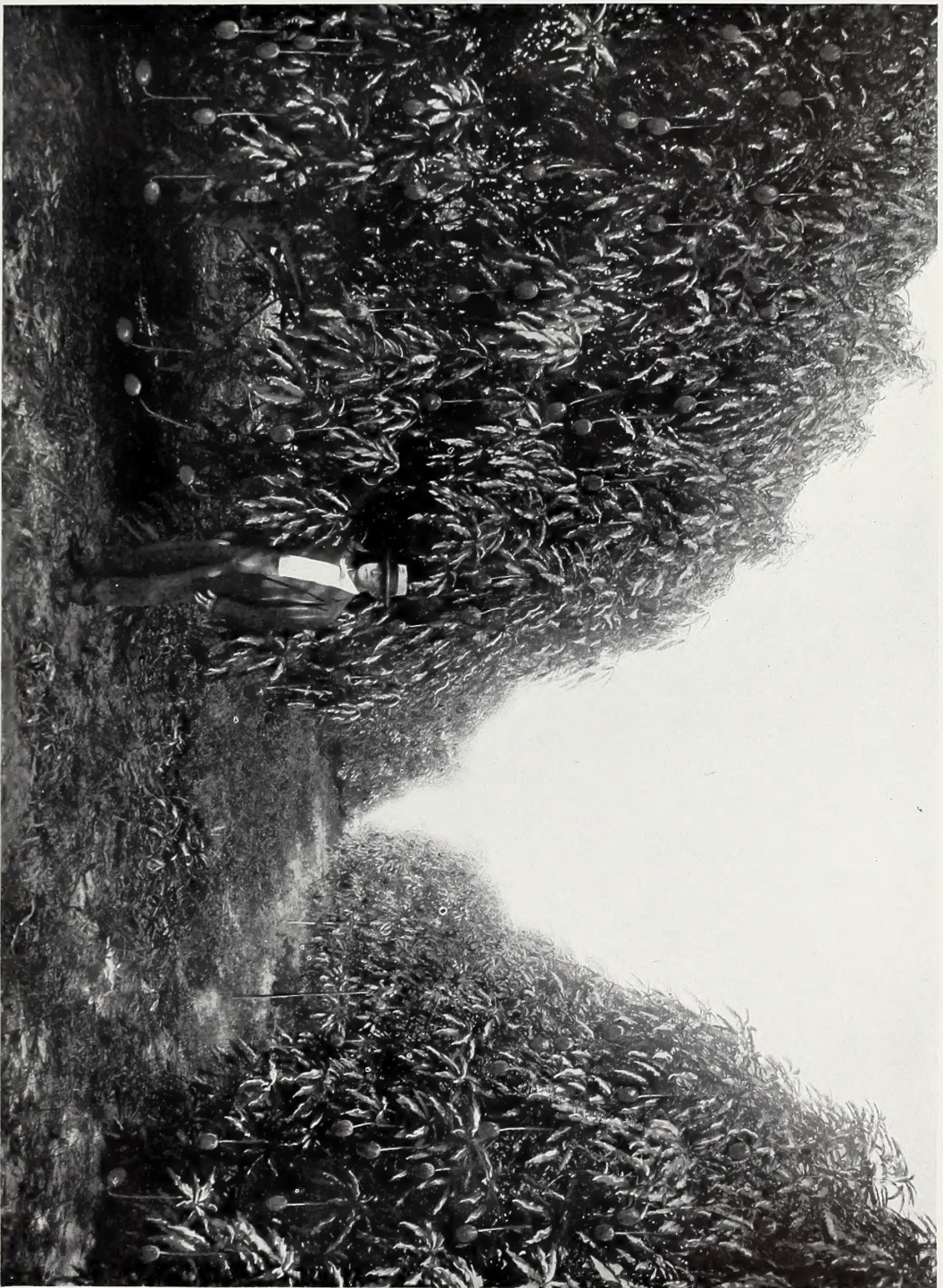
The illustration on page 2, entitled "Pioneers," is a reproduction of a photograph by Kaufmann. The persons there shown are the late Mr. W. E. March, of Miami, Florida, and myself, who are the pioneer planters of mangoes of commercial varieties in commercial orchards on the Western Hemisphere. The four Hindoos are S. Dotta, A. C. Ghosh, H. P. Mitra, and J. N. Chakravarty, of Bengal, India, who are graduates of the best colleges and trained in the most modern methods of their country, and had just finished a special course at Cornell University, Ithaca, New York, and preparatory to returning to duties in India were commissioned by the Department of Agriculture of their country to investigate our methods in tropical agriculture, and especially the budding of the mango, which had been considered impossible, and the interest in this, the most important fruit of their country, can be seen reflecting from the faces of these intelligent representatives of their race.

The group here shown in this illustration in plants and persons represents the most progressive and important development which contributes the greatest luxuries in fruit known to modern civilization.

The knowledge which we acquire through college or treatise is a valuable beginning, but at this point of development, as in all professions, we too often are fond of having our vanities fanned by the flattering terms of "Wizard" and "Scientist," when the complete knowledge and skill necessary for success can only be conveyed by and obtained from the trees themselves, by association and dealing in sympathy with them.

On account of the difference in climate, soil, habits of different trees, and conditions arising during the development of any plant, the talent, skill, and experience required for a successful grower is at a premium.

The production of young trees or nursery stock for successful planting in commercial orchards, is a different profession or business, distinct from growing fruit for profit, which requires the greatest integrity, talent, skill, and experience.



Mulgoba Mango Grove. Eight Year Old Budded Trees

The selection of young trees produced by asexual propagation, true to name, of successful variety, of strong vitality, and best condition for planting, which forms the foundation of your orchard, has very strong relations to the future success of an orchard, and cannot be substituted by any future treatment.

In the preparation of the land everything should be done for the economical welfare of the young trees when planted, which should have the most careful consideration at the time they are transplanted from nursery to the important places of an orchard tree; this is a very critical period, and everything should be done for them that will sustain a constitution, upon which their future usefulness depends.

The treatment necessary to develop a tree for successful fruit production is different from that required to produce fruit on a tree in sufficient quantity and quality necessary for commercial success.

The degrees of success in commercial fruit culture will depend upon the degree of judgment, talent, skill, and ability used in the selection of young trees planted, and future care in cultivation, fertilizing, and marketing of the fruit.

Those who plant orchards that live centuries must expect some idle time for capital at first; as is true of all other investments, the profits vary; as money to loan will often be idle in bank and the best of rental real estate will sometimes be vacant, so the most profitable orchards fluctuate in their production from year to year. We all want the good things to flow continuously, but they will not; and, therefore, as a matter of business, profits must be estimated on the average.

Mango

(*Mangifera Indica*)

The mango is the most aristocratic and the most delicious dessert fruit ever placed under cultivation; its commercial success in the past has only been defeated by difficulties in its propagation true to variety by asexual methods; and success for the future now only depends upon the planter's judgment in the selection of commercial varieties and knowledge of its culture.

We now have an orchard area in Florida of one variety that has placed this fruit upon as high a commercial standard as any fruit on American markets, and we now only require more fruit of the same grade.

The standard of commercial varieties of Mangoes depends, first, upon mechanical structure of the fruit: it must be a free stone and have good carrying qualities; last, upon quality of flavor of fruit. No one need to make a mistake, but on these points the industry seems now doomed to suffer in the hands of the propagator and planter, leaving our posterity burdened with commercial complications and large quantities of low grade fruit, the same as we have had to contend with in the cultivation of seedling trees.

The pulp of nearly all varieties of Mangoes is, by the average person who has tasted it, termed good to eat, if we are willing to make the necessary sacrifice of eating it, but, as a commercial proposition, people are not willing to make these sacrifices, and pay for them; and it is also true that the most delightfully flavored varieties can be eaten without any sacrifice of dignity or comfort, and we have also tested these fine varieties in the principal markets, with the result that all that we can produce can be sold readily at the highest prices of any fruit of the same size that has yet been offered in American markets; which can be planted and produced at no greater expense or effort than fruit from budded or inarched trees of any other variety of Mangoes now under cultivation.

The Mango tree in all of its habits shows strong character of its nobility; it is very refined and sensitive in its nature; prompt in resistance of harsh treatment, especially resisting operations in propagation and transplanting; very choice of climate and food, and, when conditions are all favorable, the tree is vigorous and strong in all varieties yet tested. When established in suitable surroundings it has all of the organs complete for the production of its fruit in as great quantities as any other fruit tree now under cultivation, and when it fails to do this the deformity is in us and not in the tree.



Mulgoba Mango Tree. Third Crop, 427 Fruits on Eight Year Old Budded Tree.

The territory in which the Mango can be grown and placed on American markets in perfect condition is limited, on account of the tropical nature of the tree.

When the trees are young a few degrees of frost will destroy them; therefore, in latitudes where frosts occur, the young trees should be protected during the first two or three winters. After the young trees are three or four years old the thick bark on the stem and the dense foliage on the wide-spreading branches furnish protection sufficient for their profitable culture where the mercury goes as low as 30 to 32 degrees Fahrenheit.

The soil best suited for the cultivation of the Mango is a light, sandy loam with well-drained surface.

The strongest evidence of the superior commercial merits of the aristocratic varieties of the Mango is in the fact that it has always been and is still, by introducers, propagators, growers, and dealers, the subject of the most humbugging of any fruit under cultivation.

Throughout the history of the Mango, which is the most delicious of all fruits, just as soon as a variety of superior merit began to gain its deserved commercial prominence, countless numbers of degenerates and jungle varieties were crowded in for its place, under the name of Mango, or that applied to the successful variety.

It has been suggested by the honest fruit trade to drop the word Mango and only use the word "Mulgoba" in the commerce of this fruit, which would not furnish the desired remedy, but does at least impeach the integrity and honesty of the introducers, propagators, growers, and dealers in Mangoes.

How to Prepare and Eat the Mango

The fruit may be eaten from the hand, the same as a peach or plum, but can be more conveniently served as follows:

To serve the fruit in halves, cut the fruit all around on the thin edge and into the thin edge of the seed, then take the fruit between the points of all your fingers, give each half a little turn in opposite directions, pull it apart, and then run the point of the knife or spoon all around the edge and under the seed and lift it out.

Serve each half on a dish and dip the pulp from the fruit with a spoon, as you would a cantaloupe. Only a few of the finest varieties of Mangoes can be served in this way.



MULGOBA MANGO

Varieties of Mango

The introduction of new varieties of Mangoes has continued over a period of many years, with thousands of varieties under observation, with apparently the selection of varieties good to eat as the only point in view, which is not a difficult thing to find, as attractive flavors are peculiar to this fruit.

The first important point of commercial value having been overlooked, which is the mechanical structure of the fruit, and the placing on the market at this time of fruit with the pulp clinging tenaciously to the seed, permeated with distasteful fibre, is alarmingly disastrous to the commercial future of the Mango, and the public still looks upon this fruit with a longing, suspicious fear of being entangled in a mass of fibre in a struggle for its delicious pulp.

We consider the varieties here listed all that are worthy of cultivation for market yet tested in this country, and that they possess the highest standards of successful fruits.

Mulgoba

From India. The stock here offered are produced from budding in direct lines from the original tree at Mangonia, Florida, which was imported by the United States Department of Agriculture in 1889.

This variety has fruited for many years in South Florida, and is being most extensively planted in commercial orchards in Florida, Cuba, and Porto Rico for American markets.

Size, medium to large; average weight, one pound. Shape, nearly round, obliquely impressed on one side, marked with very small protrusion at blossom point. Color, rich golden yellow, washed with rich bright carmine on the side exposed to the light, fading to delicate pink tints, daintily specked with very small brown dots over surface, with delicate purple bloom. Skin smooth, thin, but firm, and of good substance. Flesh, rich, golden yellow color; smooth, rich, tender, melting, sweet and delicious, with delicate, sparkling, spicy, perfumed aroma. Fibre short and coarse, extending only from the thin edges of a medium small and thin seed. Quality, very best. Can be easily separated in halves and the seed extracted without leaving any fibre in the pulp, which can be eaten from the fruit with a spoon.

Season, July. Tree a strong grower and good bearer, when of bearing age and properly cultivated.

This variety is the standard of commercial value of all the varieties yet tested in this country.

Haden

Originated from a seedling planted by the late Captain J. A. Haden at Cocoanut Grove, Florida, whose name it bears, and is apparently of the East Indian type.

Size, medium to large. Shape, oblong, nearly round, only slightly impressed on one side at blossom end, which is nearly the same size in circumference as at the stem end, making it of convenient shape for packing. Color, rich golden yellow, washed over the greater portion of surface with rich crimson and scarlet. Skin smooth, tough, and of firm substance, medium thin. Flesh, golden yellow color. Flavor rich, aromatic, and spicy. Seed medium small, fibre short and coarse, extending only from thin edge of the seed. Quality, best. Season, July.

The fruit can be easily separated in halves and the seed extracted without leaving any fibre in the pulp, which can be eaten from the fruit with a spoon.

This is the most promising new variety that has yet been fruited in this country; the trees are the most vigorous of any variety that we have yet cultivated, and, from present indications, will fruit younger than Mulgoba.



Mango Trees in Our Plant House.

Paheri

Imported by the United States Department of Agriculture from India in 1902.

Size, medium. Color, yellow, blushed with red and pink on side exposed to light. Shape, nearly round, slightly flattened, and obliquely impressed on one side, with point protrusion at blossom point. Skin medium thin, of firm substance. Flesh, rich golden yellow color, fine grain, tender. Flavor, rich and melting, highly aromatic, and spicy. Season, July.

The fruit can be easily separated in halves without leaving any fibre in the pulp, which can be eaten from the fruit with a spoon.

This is a very promising new variety, distinguished for its fine, sparkling, spicy, aromatic flavors, and the trees give promise of vigor and young fruiting tendency.

D'or

Imported by the United States Department of Agriculture from Trinidad, West Indies.

Size, medium. Color, yellow, blushed with red and pink on side exposed to light. Shape, oblong, flattened, and obliquely impressed on one side, with small protruding point at apex. Skin medium thin, of firm substance. Flesh, golden yellow color, tender. Flavor melting, slightly aromatic, and spicy. Season, July.

The fruit can be separated in halves without leaving any fibre in the pulp, which can be eaten from the fruit with a spoon.

This variety has not fruited here but once, and is not fully tested, but is a very promising new sort.



Trapp Avocado. Third Crop. 138 Fruits on Five Year Old Budded Tree.

Avocado

(Persen Gratisimer)

The Avocado has for many years been sought and highly appreciated by epicures for its dainty, rich, and nutty flavors, and has rapidly gained in popularity under primitive methods of growing them from seedling trees, each producing different varieties of varying quality, but in the past twelve years, by the application of progressive methods of asexual propagation and selection of varieties, the Avocado is now one of the most important commercial tropical fruits, and the most important food fruit in the world.

While the commercial orchard area in this section under the modern system of culture has been rapidly increased, the markets of America have only been sampled to the point of activity, and the opportunity for its growers is as great as has ever existed anywhere in the production of any fruit.

The Avocado has none of the enticing flavors of confections or dessert fruit, but its nutty flavor, when served either plain with salt or pepper or any of the salad dressings, is very highly appreciated.

It is the gift of nature to the tropical countries for food instead of meats and animal fats, and is a blessing to the people of cold climates, where so much fats and nourishing foods are required to give heat and energy to stand the cold of winter.

The Avocado in market is fast gaining the highest position of favor as a complete, healthful, nourishing, and substantial article of food.

The following analyses show the relative food value and contents of three of the most valuable, healthful, and complete articles of food:

EGGS (whole).	Per cent.
Water.....	73.7
Protein.....	14.8
Fats.....	10.5
Ash.....	1.0

Analysis by United States Department of Agriculture Experiment Station, by C. F. Langworthy, Experiment Chemist, published in charts of the department to show the relative nutritive value of foods.

AVOCADO (eatable pulp).	Per cent.
Water.....	72.8
Protein.....	2.2
Fats.....	17.3
Carbohydrates.....	4.4
Crude fibre.....	1.9
Ash.....	1.4

Analysis by Florida Experiment Station Report, 1902, published by United States Department of Agriculture, Bulletin 77, page 46.

MILK (cow).	Per cent.
Water.....	87.0
Protein.....	3.3
Fats.....	4.0
Carbohydrates.....	5.0
Ash.....	0.7

Analysis by United States Department of Agriculture Experiment Station, by C. F. Langworthy, Experiment Chemist, published in charts of the department to show the relative nutritive value of foods.

When we compare the relative value of these three foods, and estimate the value of eggs and milk in the commerce of the present time, it is not difficult to see the commercial importance of the Avocado, which is equal in food contents to either, and the most easily digested of these three most important and complete foods.

The territory in which the Avocado can be grown for American markets is limited on account of the tropical nature of the tree. It can be grown profitably where the temperature goes as low as 28 to 30 degrees Fahrenheit by protecting the young trees the first two or three winters after planting. After that time the thick bark on the stem and dense foliage on its spreading branches furnish sufficient protection.

MILK

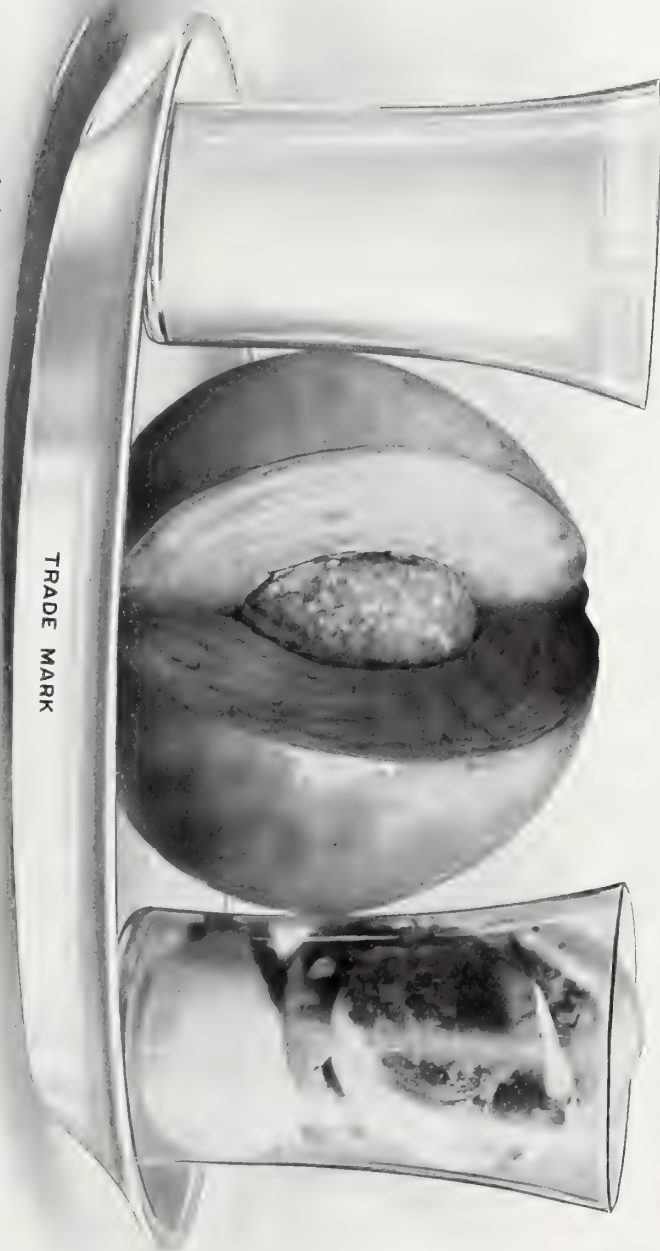
Nature's most complete foods. Either with air and water furnishes
the necessary elements to sustain life, energy and intellect.

GEORGE B. CELLON, MIAMI, FLA.

AVOCADO

EGGS

TRADE MARK



How to Prepare and Eat the Avocado

Slice and eat plain, or sprinkle with salt or pepper.

Cut in halves, sprinkle in seed cavity either salt, pepper, vinegar, lime or lemon juice, chopped onions, or any kind of salad dressing, according to taste.

Peel and cut into cubes to make salads or soups; flavor with any kind of salad dressing, according to taste.

Varieties of Avocado

The Avocado has been planted and cultivated for centuries from seedling trees, each producing a different variety, varying in size, shape, color, and quality, nearly all of which were termed, by most people who have tasted them, good to eat, but this great diversity of grade defeated their complete commercial success.

The trade and consumer has accepted it at remunerative prices to the grower, but these conditions are fast changing. As the choice varieties from budded orchards appear in the market, the trade and consumer will enforce their demands for uniform appearance, size, and high qualities.

The shape of the fruit is a very important point in varieties for market purposes. The nearer round the fruit, the more desirable on this point, which makes it possible to size and pack them in given counts and a more uniform package conforming to market rules, and this shape fruit carries much better than if in any other shape.

The varieties here listed will furnish fruit of the highest points of commercial value of any varieties now tested from July to January, and in this season we consider that they have no equal in quality and market value.

Trapp

The Trapp Avocado was originated by the late Mr. C. L. Trapp, of Cocoanut Grove, Florida, whose name it bears. It is of the South American type. Shape, nearly round, slightly distended at stem end, with very slight oblique flattening at blossom end. Average weight, one and one-half pounds. Weight, size, and shape very uniform. Color, dark green. Smooth, thin skin, of firm structure. Meat thick, rich golden yellow color; texture smooth, fine grain, firm, but rich and melting, with the exquisitely delicate buttery and nutty flavor so much appreciated in the Avocado. Seed, medium small, fitting perfectly and firmly in its cavity without space. Quality, the very best. Tree, a vigorous, prolific, regular and heavy bearer. Season, October first to January, and "hangs on well."

This variety is far superior to all others for market value. Its superior quality, shape, size and appearance, and the season at which it matures fit it for a high-priced fruit.

It can be sized for packing in an orange or grape-fruit sizer to make a uniform package of given counts.

GEORGE B. CELLON,
MIAMI, FLORIDA.



TRAPP AVOCADO

Pollock

The Pollock Avocado is of the South American type. It was originated by Mr. H. S. Pollock, of Miami, Florida, for whom it is named. It is oblong, thick necked in shape, very large; average weight, when fully matured, two and one-half pounds. Single specimens have weighed three and three-quarter pounds. Skin smooth, dark green in color. Meat very thick, of a rich golden yellow color, with narrow green streak next to the skin; seed medium small, fitting perfectly in cavity without space; meat proportions very good. Flavor mild, rich, and melting. Quality, best. Season from July to October. Tree a very vigorous grower, early and prolific bearer.

This variety furnishes a uniform fruit of high points of market value in the season of the greatest supply in the markets of seedling fruits. Its size, appearance, and quality as an early sort gives it advantages in market. It is of superior value as a table fruit, as it cuts up to great advantage.

Propagation and Planting

In the propagation and cultivation of the Mango and Avocado we are dealing with two of the most highly bred and refined trees in cultivation, that live and produce for centuries under proper treatment.

Up to the present time almost every person (except the writer, who has spent the best efforts of life to produce a tree to fill an orchard place permanently) that has anything to say or write about the propagation of these trees, exert their energies to show how simple, easy, and inexpensive these trees can be produced, which has retarded developments in this industry many years, when, in fact, to make a tree that will accomplish the desired results requires more talent, skill, and experience, and is the most expensive of any plants now known in propagation.

Producing popular priced Mango and Avocado trees is the same as Montague Glass says of clothing: "The trouble is, a popular price manufacturer cannot think big enough to turn out expensive garments, and if he could induce himself to use material at a price to make them, it goes against him to be liberal with such high-priced goods, so he skimps the garment; the price is never right if the workmanship is not good."

Mango and Avocado trees that have been properly grown, can be successfully planted in orchard at any season of the year, but the months of December, January, and February are the most desirable time for best results.

In tropical countries, where evaporation is very rapid at all seasons, more care must be exercised in the planting of trees in orchard, and Avocado and Mango trees cannot be planted from open ground nursery successfully except where they are planted within a few hours after digging and the best of attention given.

The plants we offer, growing in wooden boxes, are a great improvement over the ordinary pot plant, grown in small shallow crocks, with roots entangled in a small ball. Our plants have twelve inches of root depth, which renders moisture more available; the large ball of soil makes less root entangling; they can be more easily transplanted

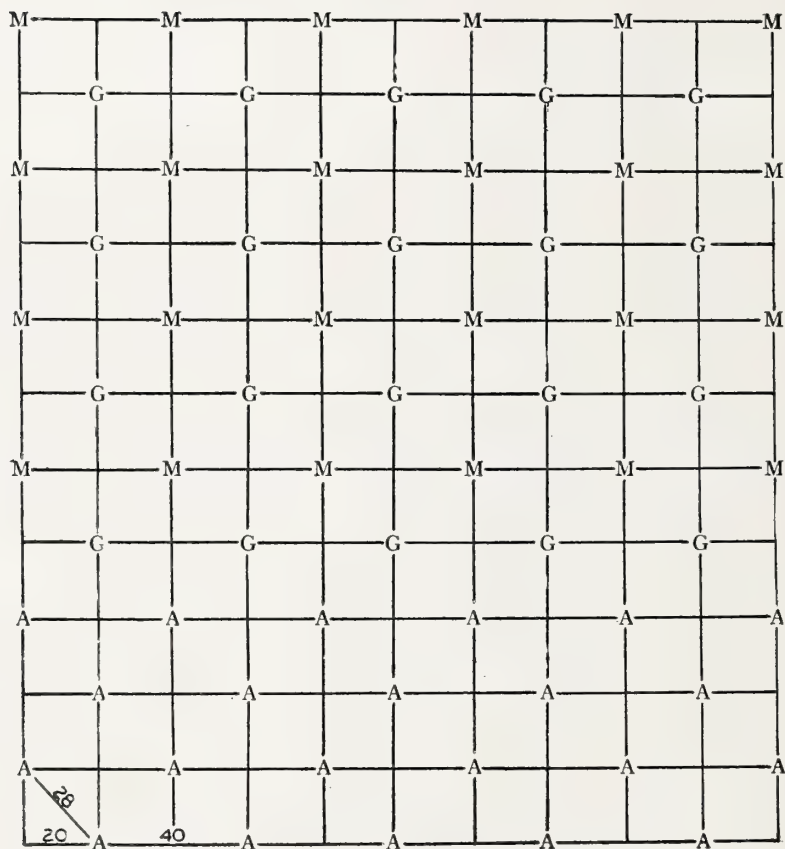


Pollock Avocado.

without disturbing the roots by splitting away the box. They grow off much quicker; are more vigorous and desirable in all respects.

In a climate where the temperature is likely to be lower than 35 degrees Fahrenheit above zero in the winter, Avocado and Mango trees should be protected for the first two or three winters after planting.

Plan of Orchard



Explanation: The places marked M are for Mango trees; the places marked G are for Grapefruit trees; the places marked A are for Avocado trees. A filler can be used to advantage by planting quick developing trees on the twenty feet check, and cut out when the standard trees need the space; Loquat, Native Limes, or Cherimoyer trees would be profitable.



Avocado Trees in Our Plant House.

Rules of Business

Visitors, whether prospective purchasers or otherwise, are at all times welcome, and a notice mailed a few days in advance will insure our personal attention, which will afford us great pleasure.

Terms of Sale. Our prices are net cash on all stock as quoted. All orders for immediate delivery must be accompanied with cash for the full price of the trees ordered.

Orders for future delivery must be accompanied with twenty-five per cent. of the price of the trees ordered.

Remittances by Bank Draft, Post-office or Express Money Orders will insure our prompt attention.

Agents. No agents are employed or authorized to represent us in any capacity; we hold ourselves personally responsible for purchase of trees direct from our nurseries only.

Guarantee. We guarantee all stock to be well grown, true to name, properly packed and shipped according to instructions, but in no case will our liabilities be greater than the original price of the trees. Our liabilities cease upon the delivery of trees to forwarding companies.

Provided, under the above and foregoing guarantee, that all claims arising thereunder must be made in due form in writing within ten days after the delivery of the trees to the purchaser.

We personally superintend the selection of seed and planting for stock, cutting of budwood from trees in our own orchard, making all records in orchard and nursery, and labeling all trees for delivery.

The standard upon which our prices are based are: Every tree that is doubtful of variety or vitality is a cull and should not be planted.

We specialize our nursery operations, and only propagate the trees here listed, and believe that we produce them as good as can be grown to accomplish the purpose desired, and true to name.

We furnish with each bill of trees instructions for planting and care.



Crate of Trees Ready for Shipment.

Price List of Trees and Plants

AVOCADO TREES

All varieties listed, budded on stock of South American type, growing in wooden boxes 5 x 6 x 12 inches inside, shipping weight about 25 to 30 pounds each when crated for shipment.

	Each	Per 100	Per 1000
6 to 12 inches high	\$.70	\$ 60.00	\$ 500.00
12 to 18 inches high90	85.00	750.00
18 to 24 inches high	1.20	110.00	1000.00
24 to 30 inches high	1.45	135.00	1250.00

MANGO TREES

Mulgoba budded on jungle seedling Mango stock. Growing in wooden boxes 5 x 6 x 12 inches inside, shipping weight about 25 to 30 pounds each when crated for shipment.

	Each	Per 100	Per 1000
6 to 12 inches high	\$.95	\$ 85.00	\$ 750.00
12 to 18 inches high	1.20	110.00	1000.00
18 to 24 inches high	1.45	135.00	1250.00
24 to 30 inches high	1.70	160.00	1500.00

All varieties of Mango listed except Mulgoba:

	Each	Per 100	Per 1000
6 to 12 inches high	\$1.60	\$140.00	\$1250.00
12 to 18 inches high	1.75	160.00	1500.00
18 to 24 inches high	2.00	185.00	1750.00
24 to 30 inches high	2.50	225.00	2000.00

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Tropical Grove. Call and See Us at Our Home.

